

PTI Modification for North End Rotary Calciners P006 and P095

BASF's North End Rotary Calciners No. 1 and 2 (Copper Calciners 1 and 2) are permitted as Emission Units (EU) P006 and P095, respectively, under PTI P0119072 (effective August 24, 2015). PTI P0119072 was issued as a Chapter 31 modification based on an increase in particulate emissions due to upgrades to the material handling equipment to provide more efficient air handling, collection of fugitives, and pneumatics. No other physical changes were made to the process equipment; however, due to the equipment upgrades the maximum mass rate of material through the calciners increased to 750 pounds per hour (lb/hr). Processing at the increased throughput rate did not result in increased hours of operation, increased natural gas combustion, or an increase in the batch process operations for upstream or downstream operations. The increase in maximum material throughput rate resulted in a 2.13 lb/hr allowable particulate matter (PM) emission limit for each calciner based on OAC rule 3745-17-11(B).

BASF is now requesting a modification in order to process a family of products that have the potential to generate nitrogen oxides (NOx) emissions during the calcination process. Based on data collected through emissions and raw material testing, emission calculations were completed to determine the potential uncontrolled NOx emissions generated by the new family of products. Table 1 summarizes the potential NOx emissions for each of the specific products included in this family of products.

Table 1. Potential NOx Emissions

Product	Maximum Production Rate (lb/hr)	Potential Uncontrolled NOx Emissions per Calciner		
		(lb/hr)	(lb/day)	(ton/yr)
Cu 1800 P	400	0.47	11.4	2.1
Cu 1820 P	400	0.47	11.4	2.1
Cu 1885 P	650	0.77	18.5	3.4
Cu 1950 P	650	0.77	18.5	3.4
Cu 1136 P	600	0.71	17.1	3.1
Cu 0396 P	650	0.77	18.5	3.4

As seen in Table 1, the potential NOx emissions based on the maximum production rates are greater than the *de minimis* emissions thresholds provided in OAC 3745-15-05. Because the maximum production rate for this family of products is less than the production rate that the current PM emission limit is based on, there is no increase in potential PM emissions. In addition, there is no change in the amount of natural gas consumed by the calciners when calcining this family of products. As such, potential NOx emissions identified in Table 1 are the only change in emissions associated with this PTI request. For consistency with the current PM emission limit, BASF is requesting an allowable NOx emission limit based on a 750 lb/hr production rate, which equates to a potential NOx emission rate of 0.89 lb/hr (3.9 tons/year) from the calcination process (not including NOx emissions from indirect-fired natural gas combustion).